Chapter 3
Guidelines for Structuring the Wind Facility Permitting Process

The goals for permitting wind generating projects, as for other energy facilities, include reaching decisions that:

- ensure that projects comply with existing laws and regulations providing for necessary environmental protection at a reasonable cost;
- are timely and minimize court challenges (or are legally defensible); and
- allow wind to be a competitive electrical generation resource.

Consistently and efficiently achieving these objectives requires a clearly defined permitting process and open communication that involves all the participants, particularly the public. This chapter describes the typical steps in wind facility permitting, and presents several principles common to many successful permitting processes. It also includes observations and recommendations made by permitting agencies, developers and others involved in permitting wind projects.

Chapter 2 described how permitting can occur at various levels of government and how permitting processes can vary between and within states. Nothing in this handbook is intended to prescribe a specific permitting process or determine which level of government should be responsible for permitting. Each state and local government is encouraged to develop the process best suited to its needs and determine which decision-making considerations are applicable and appropriate. If the potential for wind development exists within their jurisdiction, permitting agencies are encouraged to consider the topics discussed in Chapter 4 in the context of the following suggestions for structuring an effective wind permitting process.

TYPICAL STEPS IN PERMITTING

Most permitting processes for energy facilities, including wind turbines and associated transmission facilities, consist of five basic phases:

1) Preapplication
2) Application Review
3) Decision-making
4) Administrative and Judicial Review
5) Permit Compliance

Preapplication

The preapplication phase occurs before a permit application is officially filed with the permitting agency. This phase may be formal or informal, may be a required part of an agency's permitting process or at the project developer's option. It may occur from a few days to as much as a year prior to filing a permit application. During this phase, a project developer and permitting agencies typically meet to help ensure that both understand the project concept, permitting process, and possible issues. The permitting agency should clearly specify whether environmental surveys are required or other information must be submitted with the permit application. The permitting agency may also take this opportunity to become familiar with the project site, establish working relationships with other agencies and acquaint community leaders and interest groups with the permitting process. Some agencies may review drafts of the permit application, environmental analyses or other materials, if time allows.

The preapplication phase often is when project developers meet with nearby landowners, community leaders, environmental groups and other potentially affected interests. This acquaints the developer with their initial concerns and allows the developer to respond to questions or misconceptions regarding the project. In some jurisdictions, the project developer is required to hold public meetings or submit a public notice regarding the project during this phase.

Application Review

For most agencies, the application review begins when the project developer files a permit application. Many agencies review the filing to ensure that it contains sufficient information for the agency and the public to adequately understand the project and its consequences. If the agency has a time requirement for making a decision on the project, the "clock" often starts once the agency has determined that the application contains the appropriate type and amount of information, or is complete.

The activities and time frames of the application review phase vary according to each agency's permitting process requirements. Some processes require public issue identification sessions, meetings and site visits. Others also allow a "discovery" period where any formal participants in the process can question other participants regarding the project, potential impacts and mitigation measures or

possible alternatives. Frequently the "lead" permitting agency is required to evaluate the short and long term consequences of the proposed wind facility. This evaluation and the agency's recommendations on alternatives and requirements for mitigating the impacts frequently are presented to the project developer and the public in an environmental assessment report. These documents may be prepared by the appropriate federal, state or local permitting agency staff, or by consultants for the agency.

Decision-making

In its decision-making, the agency not only determines whether or not a proposed facility will be allowed to be constructed and operated, but also establishes the environmental mitigation and other construction, operation or facility closure requirements. This phase typically includes one or more public hearings. Some permitting processes require that these hearings take place in the community most directly affected by the proposed project while others are held in the city that houses the center of either the state or local government. For many state agencies, the final decision-maker is often a siting board or commission. The City Council or Board of Supervisors is the final decision-maker for most local agencies. However, in some places they may consider a project only after it has been reviewed by a separate Planning Commission.

Administrative Appeals and Judicial Review

Appeals of all or a portion of a final decision are considered during the administrative and judicial review phase. In most cases, any appeals are first remanded (directed back) to the decision-maker. Further challenges to the decision are reviewed by the courts only after all administrative appeals have been exhausted. Appeals to the courts most frequently are directed at determining whether the permitting process was executed fairly and in accordance with requirements. In addition to considering such "procedural errors," the courts occasionally are also asked to consider factual errors that may have arisen during the permitting process. One concern of many state-level permitting processes is to avoid unnecessary or lengthy legal challenges to energy projects that may be considered a public convenience or necessity. Consequently, these processes seek to avoid the need for legal challenges or direct them to the highest court possible.

Permit Compliance

The permit compliance phase involves monitoring a wind facility to ensure that it is constructed, operated and decommissioned in compliance with the terms and conditions of its permit and all applicable laws. Ideally, the monitoring program is designed to accomplish these objectives without being burdensome to the project developer or administering agency. For some agencies, the permit compliance phase also includes resolving public complaints and expeditiously considering changes or amendments to a previously permitted project. Facility closure or decommissioning is also monitored during this phase to ensure that a non-operating project does not represent a health or safety risk or pose environmental concerns, and that it is disposed of either in conformance with the permit conditions, or as warranted at the time operations cease. Agencies may: 1) require wind developers to post bonds after permitting to ensure that decommissioning costs are covered; 2) rely on the project developer to contribute to a decommissioning fund as the project generates revenue; or 3) rely on the salvage value of any abandoned equipment.

PRINCIPLES COMMON TO SUCCESSFUL WIND FACILITY PERMITTING PROCESSES

The following eight elements are suggested to public policy makers as keys to a successful process for permitting wind energy facilities:

1) Significant Public Involvement
2) Issue-Oriented Process
3) Clear Decision Criteria
4) Coordinated Permitting Process
5) Reasonable Time Frames
6) Advance Planning
7) Efficient Administrative and Judicial Review
8) Active Compliance Monitoring

While each of these guidelines may be applied individually, collectively they represent principles

for structuring a permitting process to allow for efficient agency review, meaningful public involvement, and timely and defensible decisions.

Significant Public Involvement

A key feature of a successful permitting process is providing opportunities for early, significant, and meaningful public involvement. The public has a right to have its interests considered in permitting decisions, and without early and meaningful public involvement there is a much greater likelihood of subsequent opposition and costly and time-consuming litigation. Interviews with wind project developers, regulatory agencies, community members, and environmental interest groups consistently yielded one strongly stated message: *"Public involvement is always worthwhile; public workshops are crucial!"*

While each agency's permitting process is likely to differ in the timing, location and forum for public involvement, methods that have been used successfully to ensure public participation in a permitting process include:

- developers consulting with potentially affected or interested persons and giving them the opportunity to comment before any final proposals are submitted for permit approval;
- permitting agencies notifying potentially affected persons (adjacent landowners and the community at large) at the time of filing to inform them that a permitting process is beginning and describing how they can participate;
- permitting agencies holding public information meetings at the beginning of the permitting process to inform the public of the project, the permitting process, possible issues and ways they can provide input;
- permitting agencies holding meetings or workshops in the community at times when the most people can attend to allow meaningful public involvement throughout the application and review phase;
- permitting agencies sending copies of any analyses or pre-decision documents to affected or interested persons and requesting formal comments;
- permitting agencies providing advanced notice to all affected or interested persons and the community in general of any decision-making hearings or meetings; and
- decision-making agencies allowing formal public involvement in open hearings when making the decision on the proposed project or considering appeals to the decision on the project.

Meetings, workshops and hearings offer important opportunities to share information, exchange views, and correct misunderstandings. They also can be expensive and time-consuming for developers, agencies and the public. If meetings or hearings are too frequent, last too long or become too detailed, the public can become burned-out or frustrated and consequently seek other avenues to influence the decision. Similarly, if they become focused on emotional issues or are dominated by one segment of the community to the exclusion of others, these activities may not be effective.

Effective Public Involvement

Establishing an effective public involvement program is not always easy. The components of a successful program may vary depending on the public's interest, permitting process and project developer. Some of the questions that may be considered when involving the public include:

- *What is the most effective way of notifying the interested public of meetings and hearings? (Newspaper, radio, direct mail, community fliers, or another method?)*
- *Where is the best location and what are the best times to facilitate public participation? (In the community, in the local government center, at other locations? Days, evenings, weekdays, weekends?)*
- *How many meetings or hearings should be held to accommodate public participation?*

The agency responsible for public involvement should try to determine the number and timing of meetings or hearings during the permitting process to make the most effective use of the public's time and resources and reach an informed decision in a responsible amount of time. Some agencies initiate their public involvement program prior to submittal of a formal application to avoid "surprising" the public, and continue it after approval of the project permit to deal with any concerns that may arise during project construction or early operation.

If meetings or hearings are too frequent, last too long or become too detailed, the public can become burned-out or frustrated and consequently seek other avenues to influence the decision.

Regardless of the location, timing and frequency of meetings or hearings, it is important that any public involvement program be meaningful and genuine. Members of the public have expressed concern that in some permitting processes they feel ignored, uninformed, and excluded from the decision-making process. By involving the public in a meaningful way throughout the permitting process—working one-on-one to share information and concerns and to explore likely solutions to problems—the likelihood of a hostile community or subsequent court challenges can be reduced.

Issue-Oriented Process

Successful siting processes often focus the decision on concrete issues that can be dealt with in a factual and logical manner. No project, whether it is a wind turbine or any other type of development, is without issues. Chapter 4 of this handbook discusses the issues that are most likely to be encountered in permitting wind generation facilities.

For many projects, the question is not "if" or "which" issues will arise, but "when." Because wind projects represent a long-term investment, it is important to identify any potential issues as early as possible. Most developers expect their facilities to operate for 30 years or more, and the public has a similar long-term investment in any project located in their community. Issues that are ignored or raised after permitting and construction of a project usually are more difficult and costly to resolve than those identified and dealt with early. Overlooked issues also can lead to bad feelings between the parties involved and can adversely affect future wind development. Understanding the most important issues in each wind project and focusing the permitting process on solving them is important to making timely decisions and reducing the likelihood of litigation.

Once issues are identified, the permitting process should work toward solving them in a timely and equitable manner. The process should be flexible enough to reflect the significance of the issues and degree of public concern. While decision-makers should consider all public comments on the proposed facilities, they need to determine the relevance of the comments to the permitting decision and try to keep commentors focused on the salient issues. The process also should contain "off ramps" or other means of expediting the decision-making on a particular wind development if there are not significant issues or public concerns.

A key to dealing with issues objectively and in a timely manner is having appropriate information available early in the permitting process. Because the collection of information or data represents a major up-front cost, agencies need to provide opportunities for project developers to learn about information requirements well in advance of the permitting process. The requirements should be clear, reasonable, consistently applied to all projects (and all developers) and reflect information that actually will be used in the process. Representatives of the public and interest groups, as well as developers, have suggested that agencies provide a sample checklist as a guide for the types of information needed to assess potential project impacts and develop appropriate monitoring and mitigation requirements. (Information requirements relevant to specific siting considerations are discussed in Chapter 4.)

Even with a focus on issues and the development of consistent, up-front information requirements, some issues may not be easily solved on an analytical level. Issues such as real or perceived public health effects associated with magnetic fields, changes in property values, and visual impacts can become emotional. An issue-oriented approach can help focus the debate, educate the public and decision-makers, and ensure an analytic basis for the

eventual decision. While this approach may not eliminate all opposition to a proposed project, a focus on issues allows for a clearer understanding of the objections to a project and a decision that is more likely to withstand any legal challenge of the facts associated with those objections.

Clear Decision Criteria

To most participants involved in considering wind facilities, knowing in advance the criteria the decision-makers will use in making their decisions is an important feature of a fair and efficient permitting process. Many individuals who have been involved in wind permitting have observed that if the decision-making criteria are not clearly understood, the decision is likely to be viewed as more arbitrary or political, and more susceptible to legal challenge. As many parts of the country move toward a more competitive electricity industry, making clear and consistent criteria known to all market participants in advance will become even more important.

Some developers have expressed the concern that once wind projects have been approved, new criteria can come into play to work against a project and the wind industry. They urge agencies not to change the rules after their projects are permitted or constructed. Similarly, participants including developers and environmental group representatives express concern over very specific, inflexible and inappropriate decision criteria. They have indicated that inappropriate criteria can overwhelm benefits of the permitting process, and urge agencies to look carefully at their criteria to ensure they are realistic, workable, enforceable, and are applied in the same way to other non-wind development situations.

To help provide clear criteria and also more certainty on the likely outcome of a project, some decision-makers have taken one or more of the following steps in drafting ordinances or regulations:

- list all of the findings that need to be made in the decision;
- identify specific criteria to be used in decision-making;
- define which factors will be considered in a decision and how they will be considered and/or weighted;
- specify how environmental impacts, both positive and negative, and mitigation measures, economic considerations and other factors will be balanced in the decision-making process; and
- set minimum requirements to be met by a proposed project.

Specific decision-making criteria or factors will vary depending on the permitting agency involved, the issues or concerns within their jurisdiction, and the resources likely to be affected by wind development.

Most representatives of agencies, environmental interest groups, and members of the public indicate that the primary permitting criterion is a finding that the project either has no significant environmental or public health and safety impacts or that these impacts have been mitigated to insignificance. Participants in the permitting process generally rely on existing federal or state laws requiring an environmental assessment document prepared by the permitting agency as the basis for the evaluation of project impacts. However, the type of issues considered and the scope of the analysis can vary depending on: the agency, group, or local public involved; familiarity with the area, the project and the technology proposed; and on the impact potential.

Many agencies also stress the importance of making a finding that the project complies with all applicable laws, ordinances, regulations or standards. These include Federal Aviation Administration standards, Public Utility or Public Service Commission standards for electrical lines, state or federal endangered species laws, and local land use ordinances. Some local agencies believe that the requirements for Conditional Use Permits (CUP) are adequate for wind developments and feel the CUP process is well understood by all of the participants. Other local agencies have determined that their CUP process does not readily apply to wind energy developments and have modified their permit processes to better fit the characteristics and issues of wind projects.

Anticipating the potential for future wind development, some agencies have identified preferred siting areas for wind projects prior to receiving permit applications. In this manner, they have been able to guide development of the initial wind projects toward the least environmentally sensitive lands. This allows wind projects and their potential

consequences to be better understood before development is permitted in more sensitive areas.

Some agencies use economic development considerations as decision-making criteria. Agency staff, public interest groups and wind developers have stressed the importance of including economics in the decision-making process and openly presenting the property tax, jobs and economic development benefits as well as any costs associated with a project. However, this can have a down side if the developer is seen as "buying" a favorable decision.

The needs of utilities, other power purchasers or regional reliability councils can also be important in establishing decision criteria. Some utilities have used a Request For Proposal (RFP) process to develop wind energy programs. One utility's RFP specified they were seeking development of renewable generation sources that would be cost-effective, non-polluting to the air, beneficial to the local economy and able to match the utility's load and power needs. This utility's siting considerations included availability of a good, long season wind source; overall project cost and size; availability of land for sale; favorable zoning; and no adjacent residences.

Wind developers indicate that they generally seek the highest wind sites in known wind resource areas that are economically feasible to construct, close to existing transmission facilities, have low potential for environmental impacts, and require a minimum of mitigation.

Along with criteria related to integrating wind generation into the regional or state electrical system, some agencies also include the "need" for additional generation facilities in their decisions. This may be considered in the context of a state or utility service area "integrated resource plan" or other energy policies or goals such as energy diversity. In moving to a competitive electricity market structure, some states have discontinued the requirement to evaluate "need" because the project's financial risk is not borne by the electricity ratepayers. Others have dropped the "need" process in cases where wind projects have been mandated by state law.

Coordinated Permitting Process

Project permitting can be one of the significant costs associated with developing wind resources and one of the major sources of uncertainty. Projects can be delayed and developers and agencies can incur significant costs when multiple agencies require separate processes, or where environmental impact assessment and mitigation requirements are inconsistent. This problem may be particularly significant where the wind resource area includes more than one jurisdiction or the proposed wind project and related facilities such as transmission lines or access roads affect multiple agencies with land use or permitting authority.

Wind developers note that consistent requirements in the siting and permitting processes, especially within the same Wind Resource Area (WRA), provide them with a desirable and beneficial level of

Achieving Greater Coordination

The most efficient permitting process for energy facilities would be one in which there is little or no duplication of documents or review by permitting entities, no conflicts between the different agencies in resolving issues, and no inconsistencies in permit requirements. Coordinated permitting has been achieved by:

- *issuing all state and local permits by one agency in one process;*
- *making one agency responsible for coordinating the permit review by all other agencies;*
- *having all agencies agree on concurrent review processes and schedule and on a method for resolving any differences or disputes; or by*
- *establishing a multi-agency decision-making authority to consider the review and permit requirements of all agencies in one forum.*

predictability and stability. They and members of the public have expressed concern that the rules "seem to change" across jurisdictional boundary lines and over time. Many wind developers have suggested that if more than one level of government has jurisdiction over a single development project, these agencies should coordinate to allow project review to proceed simultaneously rather than sequentially, and to avoid conflicting requirements, standards and processes. Agency staff also stress the importance of beginning close coordination between agencies prior to the filing of a permit application, and continuing it throughout the permitting, and even the compliance monitoring process.

Coordination is also important in implementing permit requirements, monitoring during construction and operation, and closing wind facilities. Inconsistencies can develop when responsibilities shift from one agency or department to another. For example, permit conditions and agreements can get confused when responsibilities are transferred from a local Planning Department that had the responsibility for permitting to the Building Department that had no previous involvement in the project but is now expected to monitor a project's compliance. If possible, the agency that developed the permit conditions should also be responsible for monitoring their compliance.

Wind developers and agencies within some wind resource areas have found it beneficial to pool their resources to resolve issues and problems that arise during project development, site planning, construction, or operation. Pooled resources have led to ongoing studies of avian mortality, erosion control, noise, and other issues of local concern. They have also improved communication and coordination and reduced overall costs for all involved.

Reasonable Time Frames

In addition to close coordination between regulatory agencies, certainty in permitting can also be provided by establishing clear and reasonable time frames for completing the various steps in the permitting process and reaching a final decision. A principal concern of any developer is that the final decision on their proposed project will be subject to lengthy, unnecessary delays. Developers prefer known "stop points" for providing project information and making significant project changes so they can complete project design and financing arrangements. Any delay costs the developer money—both for permitting consultants and in finance charges. In some cases, the developer will already have had to order equipment with lengthy manufacturing or transportation times which may end up sitting idle waiting for construction to begin.

Agencies, representatives of interest groups and the general public also need to have some certainty about the permitting schedule so can they plan their activities and make the best use of their resources.

In general, the timing of a permitting process is the responsibility of the permitting agency or agencies. Timing usually can be controlled if either one agency is in the lead of all permitting activities or all agencies involved have agreed to coordinate permitting activities and meet specific time goals. Many permitting agencies have found that the best way to address the concern about unnecessary delay is to specify reasonable time frames for each of the major phases of a permitting process leading to a final permitting decision. They clearly communicate the time frames to all participants throughout the process so that all involved have common expectations on the time available and how it is to be used.

Because of past concerns about unreasonable delays in permitting energy projects, some states have established time requirements that must be met, or the project is automatically approved. While this has worked, it can also result in agencies not deeming a project application to be filed (or to be complete) until it is certain the project can be approved in the time specified. Other agencies have established specific time frames for the final decision but have allowed some flexibility to balance the needs of time certainty and adequate public involvement, or a full hearing of disputed issues in particularly controversial cases. They have contended that a little additional time during the permitting process can be justified if it eliminates a subsequent legal challenge.

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Advance Planning

The successful permitting of any energy facility requires early planning and communication on the part of the developers and the permitting agencies. In interviews with wind developers, government agencies and the public, a common theme was the need to know the project, know the process, know the participants, and know the issues up front. In spite of pressures to the contrary, as the electricity industry moves toward greater competition, advance planning will become more important to allowing the industry to receive necessary permits in the minimum time and with the minimum cost while allowing agencies to fulfill their obligations to protect the public and its resources and avoid unnecessary legal challenges.

For developers, getting to know the project and the site location is one of the most critical steps leading to successful permitting.

Developers also stress the need to know the wind potential and micro-variants in the project area as well as the baseline environmental resources and conditions at and around the site area proposed for the project. This is helpful in responding to questions from the agencies and public during permitting and in designing a project that responds to the environmental conditions of the site and the likely concerns of the community.

Knowledge of potential projects and likely sites is also important to agencies in advance planning for wind development. Members of the public who have been involved in permitting wind projects offered that: "Governments in charge of siting should have better advance planning processes and think through the issues, impacts, problems, solutions, and results ahead of time."

Permitting agency staff similarly have observed that good planning is essential, even in a period of tighter resources and budgets. The time spent in advance planning is often recovered by reducing time spent in conflict later.

Some state and local agencies are seeking to assist the permitting process by establishing a geographic based information system that identifies land use and environmental resources. These may include zoning and land use designations, roads, transmission lines, roads and highways including scenic designations, biological resources, parks and recreation areas. A few agencies have discussed using this information to identify in advance geographic areas that: have developable wind resources or present opportunities for locating wind energy facilities; are likely to pose permitting problems for wind facilities; or where wind development would not be allowed. If this occurs, agencies should also consider the possible future expansion of wind development in areas that were not initially identified but are compatible with wind development. Delineation of these areas should be based on existing laws and regulations, environmental resources, or community concerns.

As discussed above under the *Coordinated Permitting Process* section, establishing communication is another critical function of advance planning. Most participants involved in permitting wind facilities—developers, agencies and the public—concur that identifying the key players and initiating communication is important to successful permitting and should be done before the formal permitting process begins whenever possible.

Efficient Administrative and Judicial Review

If issues or conflicts raised during a permitting process are not satisfactorily resolved, the dissatisfied party—project developer, concerned public or even agency staff—typically have an opportunity to appeal the decision to the decision-makers or to a higher administrative body. If the appeal is not resolved or if an administrative appeal process is

> *"Know all you can about the proposed project: proposed facilities—whose design, output size, unit dimensions, unit siting density; need for services—electric, telephone, fiber-optic, microwave, lubricants; dimensions of equipment and components to be delivered, size of delivery and assembly vehicles; type and amount of site preparation and grading; number, type, size, incline, and surface of access roads; and location, description, and size of any off-site structures or facilities."*
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> *–an experienced wind developer*

not available, the conflict can be raised to local, state or federal courts. While judicial challenges may be filed because of alleged factual or procedural errors, most successful challenges are the result of errors in the actual permitting process. Consequently a major goal of most wind permitting processes is to follow established procedures and produce factually-based decisions so that subsequent court challenges are not necessary. Should legal challenges occur, whether in an administrative or a judicial forum, the goal becomes to proceed efficiently and reach a conclusion in a reasonable amount of time.

One method used by many jurisdictions to increase the efficiency of handling appeals is to design the permitting process to systematically narrow the issues of concern. While all potential issues may be reviewed at the beginning of the process, issues that are either not of concern or that can be readily resolved in a manner acceptable to the developer, permitting agency staff and concerned public are set aside early in the process through meetings, workshops or initial environmental documents. As a result, only those issues specifically identified by the parties as being in dispute need to be considered in hearings before the decision-makers. Both the hearings and preliminary decision documents can also be used to further focus the issues. Using a "narrowing process," the permitting agency can produce a focused and detailed administrative record which can be used to support a controversial decision. This can significantly limit any administrative or judicial appeals and allow them to proceed more efficiently.

Some of the methods agencies have used to enhance an efficient administrative and judicial review process include:

- using an issue-oriented public hearing process incorporating significant public involvement to reach a permitting decision;
- using a contested case or trial-type hearing process for an administrative review or appeal of the final permitting action;
- allowing consideration only of the record of the contested case proceeding in a judicial appeal;
- limiting the judicial appeal to only those issues identified and unresolved in the administrative appeal;
- defining who has standing to initiate the review;
- specifying time limits within which appeals must be initiated;
- setting standards for review;
- specifying how the costs of appeals will be paid and whether costs can be awarded to a prevailing party; and
- directing whether judicial review will be to the highest state court of competent jurisdiction and eliminating any intermediate appellate court review.

Active Compliance Monitoring

During the initial years of wind development in the US, permitting and environmental review consisted primarily of a simple overview of the project. Relatively few conditions were placed on development and few, if any, provisions were made for follow-up monitoring by permitting agencies, especially after construction was complete. Unfortunately, some of these early projects were proposed by companies without an established track record or a commitment to the continued, long-term development of wind resources. Some of these companies located wind turbines in marginal resource areas, did not maintain their equipment and improperly managed their operations. When they went out of business, they left abandoned equipment, unsightly storage yards and maintenance shops, and occasional environmental damage. In addition to creating visual impacts and potential nuisance and safety hazards, these actions had the potential to harm legitimate developers who sought to manage their activities in a responsible manner.

Over the past several years, many of these concerns have been eliminated. Wind generation technology has evolved, resulting in more efficient and reliable equipment. Wind resource assessment techniques similarly have improved and the wind industry is now predominantly characterized by more stable, mature companies.

Permitting processes also have improved such that most agencies include in their permits specific conditions that must be met during construction or operation to ensure public health, safety and environmental protection. Many of these agencies also have established compliance monitoring programs to see that the conditions are carried out over the life of the project. In some states, compliance monitoring is required by law as part of the environmental review process. These monitoring programs may include annual or periodic site visits, more formal inspections or annual reports on facility operations and conditions. Active compliance monitoring also allows agencies to respond rapidly to resolve any public complaints, and to work with project developers to modify permits if project changes are needed.

Not all agencies carry out the compliance monitoring function in the same manner. The degree of monitoring typically depends on the interest and experience of the permitting agency. In some cases, few problems are encountered and the agencies feel little on-site monitoring is necessary. In others, the agency may have a very active program to perform monitoring, complaint resolution and project amendment functions. In interviews, many representatives of agencies, environmental groups, and the public urged the importance of actively monitoring wind projects after permitting. Too often, however, monitoring is not done because of insufficient resources or other priorities.

If an agency establishes a compliance monitoring program, the agency should apply the program consistently to all energy projects and should:

- monitor to ensure that the permit conditions actually are being met, rather than "monitor for the sake of monitoring";
- work closely with project developers to resolve any problems before they become compliance issues;
- establish a complaint resolution process and provide the public with a specific contact and phone number to call in the event of a complaint;
- identify in advance procedures and possible actions to deal with non-compliance;
- develop in advance a process for openly and expeditiously reviewing project amendments;
- establish provisions, in advance, for dealing with repowering, closure, or failure of projects; and
- stay abreast of the status of individual wind developments by maintaining communication with the developers throughout the life of their projects.

> *"Monitoring usually only lasts until construction is complete and maybe one check-up a year later if resources are available; then we only go out if someone complains. Subsequent experience with problems such as noise, spills, breakdowns, equipment failures, intrusions, vandalism, indicates that monitoring should be ongoing."*
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> *–agency staff member*

Permit Conditions. Permit conditions are the backbone of any monitoring program. When permitting agencies propose conditions, they should attempt to ensure that each requirement is SMARTE (Specific, Measurable, Agreed Upon, Realistic, Time Framed, and Enforceable—see next page).

Flexibility. Where it is appropriate and feasible, agencies should build flexibility into the permit requirements. The project will change in many ways after approval. Both the agency and the developer may require some flexibility to respond with changes of equipment, equipment locations, or with alternative methodologies. Agencies should avoid being inflexible unless there is no chance that they would approve an alternative product, parcel, piece of equipment or chemical. The conditions also should be consistent with the conditions proposed in other related technical areas.

Funding. Funding of compliance monitoring programs varies with the permitting agency. In some cases, staff and other resources needed to implement monitoring are funded through general state or local revenues (income tax, energy surcharge, or property taxes). In other instances, monitoring activities are funded through a one-time or annual project fee. Most federal agencies have permit requirements for projects located on public lands

"SMARTE" Permitting Conditions

SPECIFIC:	*Provide clear direction so that all parties understand what needs to be done.*
MEASURABLE:	*Provide an objective standard for measuring whether a condition has been met. Avoid setting up future subjective debates.*
AGREED UPON:	*Strive for agreement with the project owner, other agencies, and interested parties on condition requirements.*
REALISTIC:	*Strive for the simplest, most direct, and least costly condition requirements that will achieve the required goal.*
TIME FRAMED:	*Provide clear, realistic time frames for compliance with each condition.*
ENFORCEABLE:	*Make sure there is a practical method of verifying compliance with each of the conditions stipulated in the permit.*

and monitor these conditions with a portion of the development fees or annual lease payments. Some of these federal lease agreements also include requirements for performance bonding for use of the leased lands to ensure ongoing monitoring of the project and maintenance of the project and the leasehold.

Project closure and decommissioning. The potential for public health and safety or environmental concerns does not end when construction of a wind project is completed or even when a facility ceases operation. Many agencies currently include conditions in their permits to deal with project closure or decommissioning and site restoration, including:

- the removal of non-operating or downed equipment;
- removal of any residual spills;
- clean-up of storage yards and maintenance shops; and
- restoration of tower pads, access roads and other areas.

As necessary and appropriate, these conditions should be established either when the project permit is first issued or at a date prior to the planned completion of operation.

For most companies, decommissioning wind turbines is a normal part of doing business, and meeting decommissioning conditions is critical to maintaining a long-term position in the wind electric generation business. However, some agencies have found that project closure conditions are useless if an unanticipated business failure precludes the wind developer from fulfilling its obligations and the agency either does not have sufficient financial resources or cannot access the financial resources of the wind developer. These agencies have had to pay to remove equipment and clean up the sites after some wind developments failed.

One developer estimates that the current cost to remove turbines and above-ground improvements, remove foundations and buried electrical improvements to a depth of three feet, restore and re-seed the affected areas is approximately $1,500 to $3,000 per turbine (1997 dollars) for a 100 kW to 600 kW size turbine. (This figure does not include the salvage value of the tower, copper lines, transformers, or turbines.)

Agencies have relied on a variety of methods to fund decommissioning activities, including letters of credit, performance bonds, permit fees, or leasehold fees maintained in a special account. Some agencies have regarded up-front funding mechanisms as placing an excessive financial burden on developers and have chosen instead to rely on the scrap value of the equipment to obtain funds if necessary.

However, one agency cautions that if a wind facility has financial difficulty, the equipment is an attachable asset and may not be readily available for scrap. This agency expressed the concern that by the time a financial situation has been resolved and the distribution of assets decided, everything moveable may have been pilfered and the remaining equipment may be so weathered as to have lost its scrap value. Regardless of the methods used for dealing with closure, agencies are urged to determine if decommissioning represents a concern and, if it does, to carefully select the funding mechanism that best meets their needs.

CONCLUSIONS

As many parts of the country move toward a more competitive electric industry, efficient and consistently handled permitting of wind facilities is more important than ever. Regardless of which level of government is involved, permitting processes that result in timely decisions, focus on the critical issues early, involve the public, and avoid unnecessary court challenges will enable wind generation to compete with other energy technologies and provide a diverse and environmentally responsible supply of energy.

CHAPTER 3 REFERENCES

Much of the information in this chapter was drawn from interviews with individuals involved in some aspect of wind permitting. See Appendix D for a complete list of the individuals interviewed. NWCC Siting Subcommittee members also contributed their experience and expertise.